

WHEATON® Filtration Assemblies

Set-Up and Use Guide

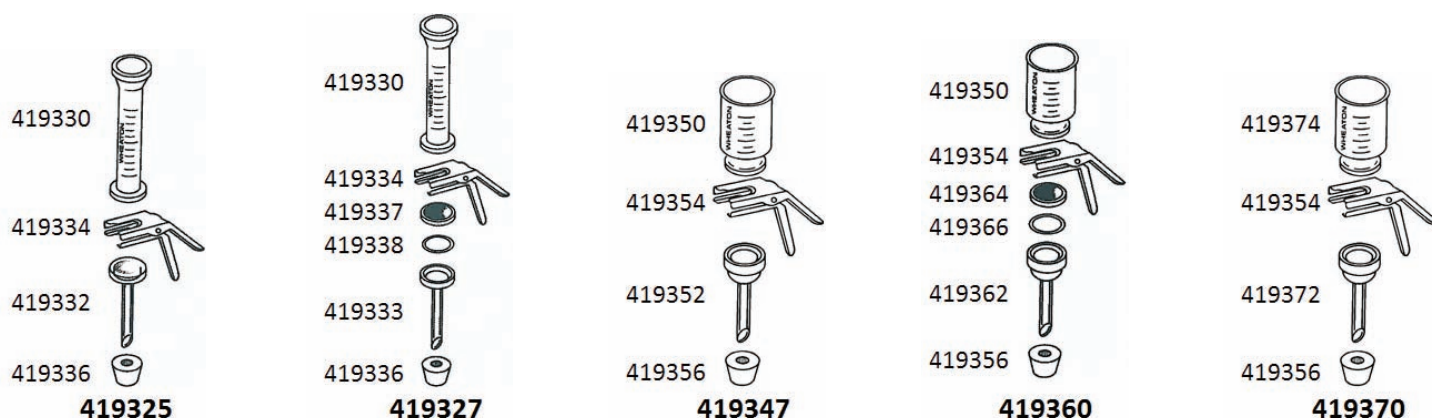
User Manual



Applies to 25mm and 45mm Filtration Assemblies with Metal Clamp and Support Base

WHEATON Catalog Items: 419325, 419327, 419347, 419360, 419370

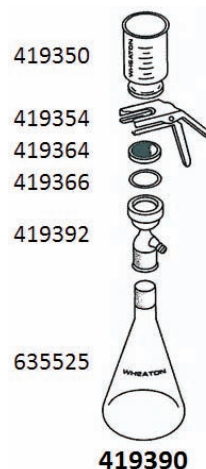
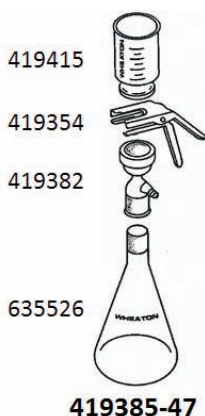
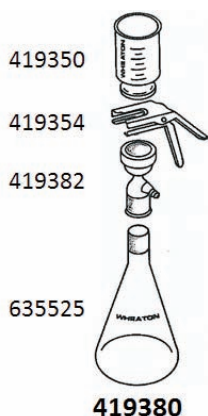
1. Slide the silicone stopper over the stem of the support base. Water may be used as a lubricant to help the stopper slide onto the glass stem.
2. Seat the stopper and base assembly firmly into the neck of a filtration flask, such as WHEATON items 635229 (25 mm) or 635232 (47 mm).
3. If the glass support base has a fritted glass surface, carefully center an appropriate sized filter membrane onto the support surface and proceed to step 5.
4. If the glass support has a recess for a stainless steel support screen, place the support screen into the recess of the support base with the flat side of the screen facing up. If needed, use the PTFE gaskets to raise the support screen until it is level with the top surface of the glass support base.
5. Place the glass funnel carefully onto the membrane and secure in place with the aluminum clamp.
6. Connect the filtration flask to a vacuum source using ¼" (6mm) ID flexible vacuum tubing. A second flask should be connected between the filtering flask and the vacuum source to prevent accidental entry of the filtrate into the vacuum source.
7. Apply the vacuum and pour the sample into the funnel to pull the sample through the membrane filter.
8. After the sample has passed through the filter membrane, turn off the vacuum and remove the clamp and glass funnel. The filter membrane may now be removed for further study.
9. Immediately after use, disassemble the filtration assembly and clean the components.



Applies to 45mm Filtration Assemblies with Tapered Joints, Metal Clamp and Support Base

WHEATON Catalog Items: 419380, 419385-47, 419390

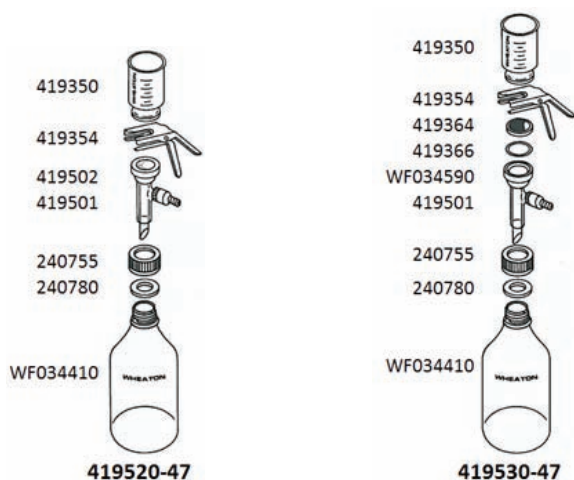
1. Apply a light coating of silicone vacuum grease onto the 40/35 tapered joint of the filter flask.
2. Place the glass support base onto the 40/35 tapered joint of the filter flask.
3. If the glass support base has a fritted glass surface, carefully center an appropriate sized filter membrane onto the support surface and proceed to step 5.
4. If the glass support has a recess for a stainless steel support screen, place the support screen into the recess of the support base with the flat side of the screen facing up. If needed, use the PTFE gaskets to raise the support screen until it is level with the top surface of the glass support base. Place the glass funnel carefully onto the membrane and secure in place with the aluminum clamp.
5. Connect the hose fitting from the support base to a vacuum source using $\frac{1}{4}$ " (6mm) ID flexible vacuum tubing. A second flask should be connected between the filtering flask and the vacuum source to prevent accidental entry of the filtrate into the vacuum source.
6. Apply the vacuum and pour the sample into the funnel to pull the sample through the membrane filter.
7. After the sample has passed through the filter membrane, turn off the vacuum and remove the clamp and glass funnel. The filter membrane may now be removed for further study.
8. Immediately after use, disassemble the filtration assembly and clean the components.



Applies to 45mm Filtration Assemblies with GL45 Cap, Metal Clamp and Support Base

WHEATON Catalog Items: 419520-47, 419530-47

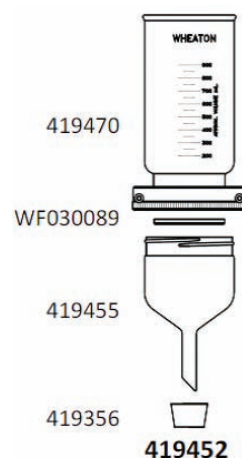
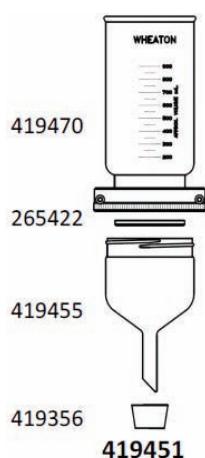
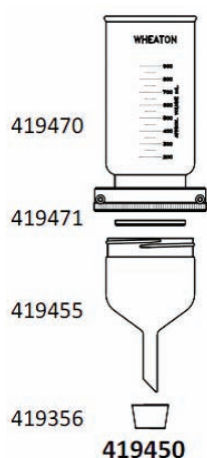
1. Assemble the plastic hose fitting and attach to the glass support base.
2. Slide GL45 cap and PTFE / silicone ring over stem of support base.
3. Carefully insert stem of support base into opening of bottle with GL45 thread and tighten cap.
4. If the glass support base has a fritted glass surface, carefully center an appropriate sized filter membrane onto the support surface and proceed to step 6.
5. If the glass support has a recess for a stainless steel support screen, place the support screen into the recess of the support base with the flat side of the screen facing up. If needed, use the PTFE gaskets to raise the support screen until it is level with the top surface of the glass support base. Place the glass funnel carefully onto the membrane and secure in place with the aluminum clamp.
6. Place the glass funnel carefully onto the membrane and secure in place with the aluminum clamp.
7. Connect the plastic hose fitting from the support base to a vacuum source using ¼" (6mm) ID flexible vacuum tubing. A second flask should be connected between the filtering flask and the vacuum source to prevent accidental entry of the filtrate into the vacuum source.
8. Apply the vacuum and pour the sample into the funnel to pull the sample through the membrane filter.
9. After the sample has passed through the filter membrane, turn off the vacuum and remove the clamp and glass funnel. The filter membrane may now be removed for further study.
10. Immediately after use, disassemble the filtration assembly and clean the components.



Applies to 90mm Filtration Assemblies with Threaded Connector, Stopper, and Support Base

WHEATON Catalog Items: 419450, 419451, 419452

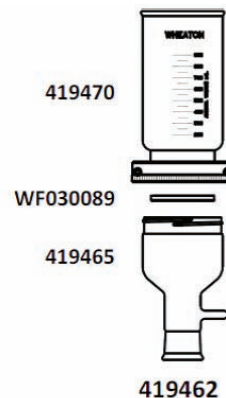
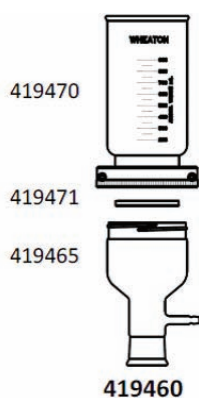
1. Slide the silicone stopper over the stem of the glass support base. Water may be used as a lubricant to help the stopper slide onto the glass stem.
2. Seat the stopper and base assembly firmly into the neck of a filtration flask, such as WHEATON item 635232.
3. Place the membrane support disk into the recess of the glass support base (stainless steel support screen must be placed with the flat side of the screen facing up).
4. Carefully center an appropriate sized filter membrane onto the support surface.
5. Place the glass funnel carefully onto the membrane and secure in place using the threaded connector.
6. Connect the filtration flask to a vacuum source using $\frac{1}{4}$ " (6mm) ID flexible vacuum tubing. A second flask should be connected between the filtering flask and the vacuum source to prevent accidental entry of the filtrate into the vacuum source.
7. Apply the vacuum and pour the sample into the funnel to pull the sample through the membrane filter.
8. After the sample has passed through the filter membrane, turn off the vacuum and remove the connector and glass funnel. The filter membrane may now be removed for further study.
9. Immediately after use, disassemble the filtration assembly and clean the components.



Applies to 90mm Filtration Assemblies with Threaded Connector and Tapered Joints

WHEATON Catalog Items: 419460, 419461, 419462

1. Apply a light coating of silicone vacuum grease onto the 40/35 tapered inner joint of a filter flask, such as WHEATON item 635525.
2. Place the glass support base onto the 40/35 tapered joint of the filter flask.
3. Place the support disk into the recess of the glass support base (stainless steel support screen must be placed with the flat side of the screen facing up).
4. Carefully center an appropriate sized filter membrane onto the support surface.
5. Place the glass funnel carefully onto the membrane and secure in place using the threaded connector.
6. Connect the hose fitting from the support base to a vacuum source using $\frac{1}{4}$ " (6mm) ID flexible vacuum tubing. A second flask should be connected between the filtering flask and the vacuum source to prevent accidental entry of the filtrate into the vacuum source.
7. Apply the vacuum and pour the sample into the funnel to pull the sample through the membrane filter.
8. After the sample has passed through the filter membrane, turn off the vacuum and remove the connector and glass funnel. The filter membrane may now be removed for further study.
9. Immediately after use, disassemble the filtration assembly and clean the components.



Care and Cleaning of Glass Filtration Assemblies

Safety

Carefully inspect glassware before using it under vacuum. Repair or replace any glassware that is scratched, chipped, cracked, or broken. Also, always use adequate safety shielding when working with glass under vacuum.

Drying and Sterilizing

Do not subject filtration glassware with a fritted disk to sudden changes in temperature or to a direct flame. Excessive temperature differences between the fritted disk and its surrounding glass causes internal strain to develop in the glassware, which can lead to fracturing of the filtration base. Place fritted glassware in a cold drying oven or autoclave. Do not let the speed of heating or cooling exceed 8° C per minute. Before filtering hot liquids, slowly bring the filtration base up to the temperature of the liquid in a drying oven or hot cabinet. Slowly heat wet fritted support bases to 80° C, and dry for (1) hour, before increasing the temperature.

Setup

When using a vacuum filtration assembly, connect a second flask between the filtering flask and the vacuum source. This helps prevent the accidental entry of the filtrate into the vacuum pump.

Cleaning

Fritted Support Bases – Wash a new fritted glass filtration base with hot hydrochloric acid, following with several rinses of either distilled or high-quality deionized water. This procedure removes dust particles and powered glass from the pores of the fritted disk. Pull the acid wash and water rinses through the fritted disk with a good vacuum. Start each successive water rinse only after the preceding one has been completely pulled through.

After use, if no precipitate has entered the pores of the fritted disk, it may be sufficient to rinse the surface of the fritted disk under the tap or with a rinse bottle. Then wipe the fritted disk surface clean with a small brush or squeegee. Do not use paper towels to dry the fritted disk, since this can force particulates into the pores of the disk. Many precipitants can be removed from the pores of the fritted disk by back-flushing. Connect the stem of the filtration support base to a water tap with a piece of rubber tubing and allow the water to run backwards through the fritted disk. Warning: the water pressure must not exceed 15 PSI (1 kg/cm²).

When working with biological compounds, use sulfuric acid with a nitrate or perchloric addition as the cleaning agent. Avoid dichromate sulfuric acid as a cleaning agent to prevent the reduction formation of trivalent chromium compounds. Hot, concentrated phosphoric acid and hot alkaline solutions attack the surface of the glass and therefore are not suitable for cleaning.

Stainless Steel Screens – Stainless steel screens can be washed with a laboratory detergent with an initial rinse with tap water and a final rinse with distilled water. Hydrochloric acid is not recommended for cleaning as this can promote corrosion of the stainless steel.

Aluminum Clamps – The aluminum clamps have been anodized to prevent corrosion. A wash with a good laboratory detergent followed by an initial rinse with tap water and a final rinse with distilled water should be adequate.

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